Impact Study of Value-Added Functionality on Inverters in Energy Storage Systems

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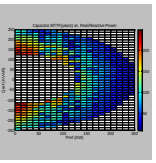

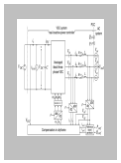

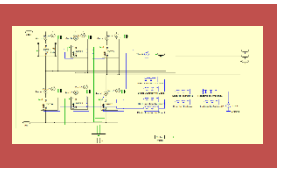

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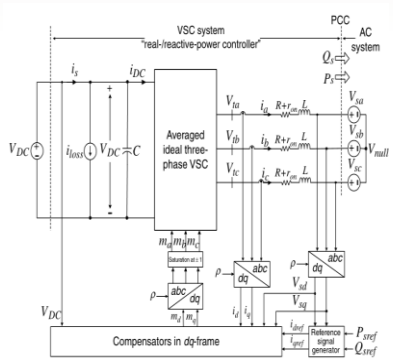
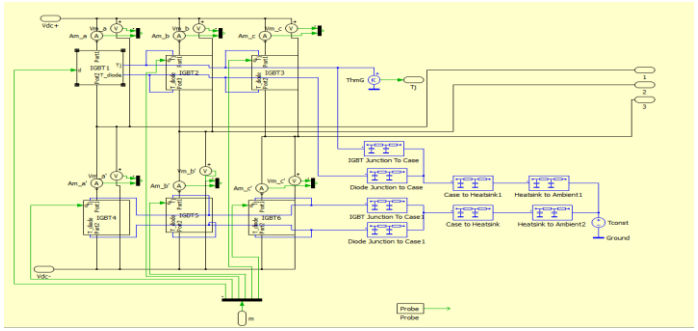
Motivation

- Power conversion systems (PCS) developers are incorporating value-added functions
- Little is known about the effect on overall PCS reliability.



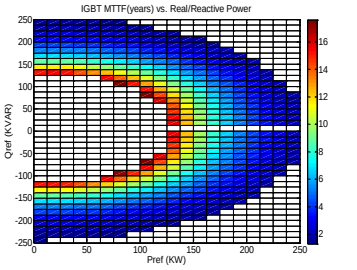
Objective

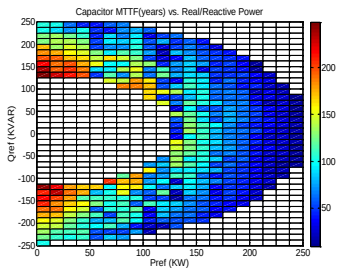
- Develop electrical models to gain an understanding of the degradation of a PCS and its internal components due to value-added functionality in the voltage and frequency support applications.
- The reliability models will then be leveraged to identify areas of improvement.



Project Status

- Preliminary Electrical and Thermal Models have been developed.
- Initial assessments of IGBT, Diode, and DC-Link Capacitor reliability have been considered.
- Voltage support simulation has been developed; frequency support is underway.





The authors gratefully acknowledge the support of the Department of Energy/Office of Electricity's Energy Storage Program.